REMARKS:

Claim 1 is currently pending in the application. Claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,409,453 to Smith ("Smith").

New Claims 2-7 have been added.

Rejections Under 35 U.S.C. § 102(b)

Claim 1 stands rejected under 35 U.S.C. § 102 (b) as being unpatentable over U.S. Patent No. 4,409,453 to Smith.

The Examiner states that "Smith discloses in the specification and Figs. 1-18 an invention in the same field of endeavor as applicant's invention and as described in applicant's claim 1. In particular, in regard to at least claim 1, Smith shows a speed cooking oven (1) for cooking a food product by hot gas comprising:

(a) a housing defining a cooking chamber (79) having a top wall (2), bottom wall (8), right side wall (6), left side wall (4) and back wall (10);

(b) a conduit means (at least plenum 35 and upper and lower chambers bounded by plates 82,83) associated with the cooking chamber (79), said conduit means providing for the circulation of the gas to and from the cooking chamber (see Figs. 2 and 3);

(c) flow means (30) for causing circulation of the gas (see col.6, lines 4-8);

(d) a thermal means (50) for heating the gas;

(e) a control means (24-28) for controlling the gas (see col. 5, lines 63-67);

(f) a first gas directing means associated with the conduit means and

disposed above the food product (see at least the central upper jet 81 in Fig. 6, which is produced from a tube 90 as shown in Fig. 2 or see the middle tube 126 producing jet 81b of Fig. 8);

(g) a second gas directing means disposed above the food product (see at least the rightmost jet 81 in Fig. 6, which is produced from tube 90 as shown in Fig. 2 or see the right most tube 126 producing jet 81c in Fig. 8);

The Examiner goes on to state that: "In regard to the recitations that the first and second gas directing means are configured to cause gas from these means to collide upon the upper surface of the food product, these recitations are considered present in Smith. Specifically, in describing Fig. 8, Smith notes that the high velocity jets (81) impinge upon the surface of a food product (P) "to provide very rapid heat transfer and very rapid water vapor removal from the surface of the product." (Smith, col. 10, lines 45-51). Further, Smith also describes that the jets (81) after striking a sold surface are "transformed into a turbulent mushroom shaped pressure area" (se col. 1, lines 6-10). The examiner considers that the above noted descriptions suggest that the gas jets from the gas directing means in either Fig. 6 (unshown tubes 90) or Fig. 8 (upper tubes 126) noted above collide with one another as described. The following are segments of Fig. 6 and Fig. 8 to further illustrate what the examiner considers to be the colliding flows."

The examiner has also added arrowheads pointing to specific areas of Figs. 6 and 8 of Smith.

Applicant respectfully disagrees. Although the examiner considers Smith to teach turbulently colliding airflow to perform cooking, Smith actually teaches away from turbulently colliding airflow.

Smith teaches cooking of food product by "**discrete jets of heated high velocity air**" which are **"moved across the surface of a product to provide rapid heating"** (col. 4, lines 18-20). Smith is replete with references to discrete columnated jets of air. For example, see Abstract wherein "spaced discrete high velocity jets of heated air to impinge against exterior surfaces of the food product" are described.

Smith teaches impingement of airflow against a food product surface. Impingement cooking has been utilized for many years, and on this point applicant agrees with the Examiner. However, applicant teaches colliding airflow prior to said airflow contacting the food product surface. This is not impingement cooking and is not taught by Smith.

The invention of Smith requires that jets/nozzles be of a proper size and proper spacing (col. 3, lines 27-32). The Smith invention requires that jets (81) be properly spaced such that "discrete columnated jets of air are formed to impinge upon the surface of the product, said jets being **spaced such that return air passes between the jets in a pattern so that one jet does not sweep under another jet as air returns to a blower** for circulation over a heating element." (emphasis added by applicant). Applicant additionally directs the examiner's attention to Fig. 1 of applicant's application wherein applicant's Fig. 1 depicts jet impingement of inventions similar to Smith. Prior to applicant's invention, impingement cooking utilized discrete columnated jets of air in order to impinge against a food product surface, thereby cooking the food. Applicant's invention specifically teaches away from impingement cooking.

Turbulent mixing of airflow(s) is detrimental to the invention of Smith and is to be avoided. Smith insures return gas flow will not be impeded by utilization of proper

spacing of nozzles/jets and proper sizing and spacing of return air paths. Smith describes (col. 4, lines 18-20; col. 10, lines 62-68) jets of high velocity air moving across the surface of a food product. Smith also describes movement of the food product relative to the discrete jets (col. 9, lines 43-45). Without movement of either the jets relative to the food product or the food product relative to the jets, even cooking would not be possible. An undesirable "polka dot" browning (scorching) pattern results on the surface of the food product and indeed, one of the drawbacks of impingement cooking sought to be overcome by applicant's invention is cooking without the scorching effect and without moving either the food product relative to the jets or the jets relative to the food product.

Unlike the Smith oven, applicant's oven functions with a minimum number of moving parts, thus reducing complexity and cost. It should be noted in this regard that Smith must move the food relative to the impinging air jets to avoid spot burning, so clearly it would not be obvious to eliminate this relative movement.

Throughout Smith one finds references to "sweeping jets", "sweeping airflow" etc. Because the Smith invention produces columnated airflow and the undesirable polka dot effect, a motion of either the jets or the food product is necessary. No such motion is necessary for applicant's invention and indeed one of the advantages of colliding the airflow with itself of applicant's invention is the elimination of mechanical means to "clean up" the negative effects of impingement style cooking. Applicant's has amended claim 1 to specifically require a stationary cooking rack, and stationary first and second gas directing means.

The examiner states: "As shown in particular in Fig. 8, a first gas jet (81b) and a second gas jet (81c) are provided to strike a food product (P) **and are considered** (by the examiner) to collide turbulently in close proximity to a surface of the food product to desirable enable very rapid heat transfer and very rapid water vapor removal from the surface of the product" (col. 10, lines 45-51)."

However, the examiner has improperly and incorrectly combined text, and thereafter rejected applicant's claims based upon an argument that is not taught in Smith. See column 10, lines 45-51 wherein is described:

> ***"As illustrated in Figure VIII, high velocity jets 81 impinged against the upper surface of an irregular shaped product P to provide very rapid heat transfer and very rapid water removal from the surface of the product. It should be appreciated that the sweeping air jets 81 provides relatively uniform heating for surfaces of odd shaped food products."***

Later in the specification Smith discusses the effect of airflow contacting a solid surface such as the bottom of a tray and further describes, (col. 11, lines 6-10):

> "***It should further be appreciated that sweeping pressure jets 81 strike solid surfaces, such as tray T, such that the streamlined jet 81 is transformed into a turbulent mushroom shaped pressure area which effectively heats the underlying*** **surface of any irregular object."**

The examiner has incorrectly combined the two paragraphs into a single teaching that is not taught by Smith. Column 10 lines 45-51 describe high velocity jet impingement against the upper surface of a food product. However, Column 11, lines 6-10 describes the effect of jet 81 impacting a solid surface such as the bottom of a tray and the resulting effect of such impact. The result is the **transformation** of an impingement jet **into** a "turbulent mushroom shaped pressure area". Smith merely utilized the word "turbulent" to describe the transformation of discrete columnated airflow into a "turbulent mushroom shaped pressure area". The examiner apparently picked up on the word

"turbulent", and applied said term to the two dimensional Fig. 8 and assumed, incorrectly, a turbulent collision of airflow----which is nowhere taught by Smith.

Of critical importance to Smith is the spacing of jets 81 and the return paths 80 that allows for unimpeded airflow back to the blower and heater.

Again, restating the previous paragraph, the spacing of the jets 81, and the return air passages 80 are ***critically important*** for operation of the Smith invention, and this spacing requirement is referenced throughout Smith: (See col. 10, lines 45-51 describing the effect of high velocity sweeping jets impinging against the surface of a food product, creating very rapid heat transfer and very rapid water removal. Jets 81 are **spaced apart to facilitate return of airflow**; col. 3, lines 28-29 "...jets are of **proper** size, **spacing**; col.4, lines 40-43: "...said jets being **spaced such that return air passes between the jets in a pattern so that one jet does not sweep under another jet as air returns to a blower for recirculation**..."; column 8, lines 18-24: "The jets are arranged in **pattern such as that shown in FIG. III so that air from one jet can return to the blower without passing under another jet**. The **spacing between columnar or lineal jets is over twice the minimum width of the jet so that the proper return air space is provided between the discrete jets so that returning air does not interfere with successive jets**".

When referring to the air return passages themselves, Smith states, (col. 48-63) "...passages 80 in jet plates 82 are not positioned in rows parallel to walls 4' and 6' of the cooking compartment 79. In the configuration of passages 80, illustrated in FIG. III if the drawing, the openings are spaced somewhat circumferentially about an axis spaced laterally from the center of jet plate 82 toward opening 44 formed in the rear end of air return duct 36 through which air is drawn by impeller 32. Passages 80 are spaced a distance of at least two times the diameter of opening 80 and a distance less than about 20

times the diameter of each passage 80. Such spacing permits flow of **diffused air resulting from impingement of jets 81 against the surface of the food product** through spaces between the jets to the air return duct 36 to prevent interference between the return air and the jets 81."

As can be seen from the previous descriptions, the spacing of air jets 81 and air return paths 80 is critically important to the Smith invention. Therefore, the turbulent airflow illustrated by examiner's notation and examiner's arrow is undesirable and is to be avoided. As presented by the examiner, turbulent collision of airflow produces an inoperable device.

As referenced col. 8, line 59, the airflow that impinges against the food product becomes "diffused" as a result of impingement of jets 81 against the food product. The heated airflow has therefore been utilized and is now re-circulated for re-heating. Again, it is important that the return air does not interfere with jets 81 (col. 8, lines 60-65). Therefore not only is the examiner's example detrimental to the proper functioning of the Smith invention, with proper spacing and proper sizing of jets 81, this effect is to be avoided. And, as previously described, the avoidance of this effect is described throughout the Smith reference. **The turbulence the examiner inserts into Smith Fig. 8 is an effect Smith taught to avoid.**

Although the examiner has added an arrow and a reference to "turbulently colliding" air to FIG. 8, the reference of "turbulently colliding" is not consistent with the text of Smith. See col. 11, line 8 wherein the word "turbulent" is described. At least two important differences exist between the examiner's notation and the text of Smith. First, Smith states "jet 81 is "transformed" (col. 11, line 8) into a turbulent mushroom shaped pressure area which effectively heats the underlying surface of any regular object". Therefore Smith does not teach the **collision of jets** of air but rather teaches the

transformation of an impingement jet **into** a mushroom shaped pressure area. Therefore, there is no "turbulent collision" as referenced by the examiner. Only transformation of one type of jet (impingement) into another type (mushroom shaped pressure area).

Additionally, not only is there no turbulent collision of jets--the mushroom shaped pressure area is created by the effect of the food product being placed into a tray for cooking. Jet 81(d) impact against the bottom of the tray within which the food is placed and is then re-directed upward under the food product (81d). The turbulent mushroom shaped pressure area refers to the airflow cooking the underneath side of a food product and does not in any manner refer to the airflow on the top surface as depicted by the examiner's notation.

The airflow as depicted by the examiner is actually "diffused" air and is otherwise spent (lost its heating value) and is on its way back to the heater for re-heating. The spacing of the return air paths is such that this air moves back without interfering with any other return air or with any of the impingement jets (see also Fig. III) for illustration of airflow.

Although the examiner has provided applicant with Fig. 8 of Smith (with Examiner's notation), this representation is a two dimensional view of the airflow. Examiner has incorrectly assumed the diffused or spent airflow depicted at the arrowhead is actual collision of airflow. Applicant directs Examiner's attention to the various other FIGS. of Smith. For example, FIG. III illustrates all return airflows as **non-colliding** airflow. Additionally, as can be seen in FIGS. III & XIII, the jets/nozzles are not shown to be side by side but rather staggered throughout the jet plate. Again, it is important to the Smith invention that return airflow not impact or interfere with jet impingement and that collision between jets is to be avoided by utilization of proper jet/nozzle spacing and proper spacing of return air paths. As described, col. 8 lines 18-24

"The jets are arranged in pattern such as that shown in FIG. III so that air from one jet can return to the blower without passing under another jet. The spacing between columnar or lineal jets is over twice the minimum width of the jet so that the proper return air space is provided between the discrete jets so that returning air does not interfere with successive jets." **Smith therefore teaches exactly the opposite as what the examiner "considers"** and has noted on Fig. 8 of Smith and cited as basis of rejection.

The collision relied upon by examiner in examiner's notation is instead airflow returning from each of jets 81a, 81b and 81c. Specifically, the return airflow from the right side of jet 81b (after jet 81b impinges against food product P) does not collide with the airflow from jet 81c (after jet 81c impinges against food product P) as the examiner considers, but instead each of these two airflows move back to the blower in spaced apart openings as described throughout Smith.

Obviousness-Type Double Patenting Rejection:

6. Claim 1 stands rejected on the grounds of nonstatutory obviousness-type double patenting as being unpatentable over Claim 3 of U.S. Patent No. 6,874,495 to McFadden. Although the conflicting claims are not identical, the examiner asserts that they are not patentably distinct from each other because claim 1 of the current application is broader in scope but claiming the same invention as claim 3 of U.S. Patent No. 6,874,495.

The Applicant respectfully submits that by amending claim 1, the Examiner's rejection on the grounds of nonstatutory obviousness-type double patenting is now moot.

Therefore, the Applicant submits that Claims 1-7 are now in condition for allowance, and respectfully requests that Claims 1-7 be allowed.

7. Claim 1 stands rejected on the grounds of nonstatutory obviousness-type double patenting as being unpatentable over Claims 1-3 of U.S. Patent No. 7,055,518. Although the conflicting claims are not identical, the examiner asserts that they are not patentably distinct from each other because claim 1 of the current application is broader in scope but claiming the same invention as claims 1-3 of U.S. Patent No. 7,055,518.

The Applicant respectfully submits that by amending claim 1, the Examiner's rejection on the grounds of nonstatutory obviousness-type double patenting is now moot.

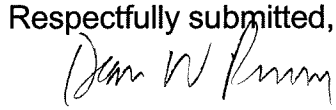
Therefore, the Applicant submits that Claims 1-7 are now in condition for allowance, and respectfully requests that Claims 1-7 be allowed.

8. Claims 1 stands provisionally rejected on the grounds of nonstatutory obviousness-type double patenting as being unpatentable over Claim 4 of co-pending Application No. 11/098,280. Although the conflicting claims are not identical, the examiner asserts that they are not patentably distinct from each other because claim 1 of the current application is broader in scope but claiming the same invention as claim 4 of application 11/098,280.

Applicant respectfully submits that by amending claim 1, the Examiner's provisional rejection on the grounds of nonstatutory obviousness-type double patenting is now moot.

Therefore, the Applicant submits that Claims 1-7 are now in condition for allowance, and respectfully requests that Claims 1-7 be allowed.

Respectfully submitted,



Dean W. Russell
Reg. No. 33,452

KILPATRICK STOCKTON LLP
1100 Peachtree Street
Suite 2800, Atlanta, Georgia 30309
404.815.6528 (direct phone)
404.541.3377 (direct fax)